




Alienware M18x Service Manual


Before You Begin	Internal Card With Bluetooth Wireless Technology
Battery Pack	Speakers
Base Cover	I/O Board
Wireless Mini-Card	Optical Drive
Coin-Cell Battery	Video-Card Heat-Sink Fan(s)
Hard Drive(s)	Video-Card Heat-Sink(s)
Center Control Cover	Video Card(s)
Power-Button Board	Processor Heat-Sink Fan
Keyboard	Processor Heat-Sink
Macro Keyboard	Processor Module
Memory Module(s)	System Board
Display Assembly	Subwoofer
Palm Rest	System Setup
Status-Light Board	Flashing the BIOS

Notes, Cautions, and Warnings

-  **NOTE:** A NOTE indicates important information that helps you make better use of your computer.
-  **CAUTION:** A CAUTION indicates potential damage to hardware or loss of data if instructions are not followed.
-  **WARNING:** A WARNING indicates a potential for property damage, personal injury, or death.
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2011-04 Rev. A00

Regulatory model: P12E
Regulatory type: P12E001

Base Cover

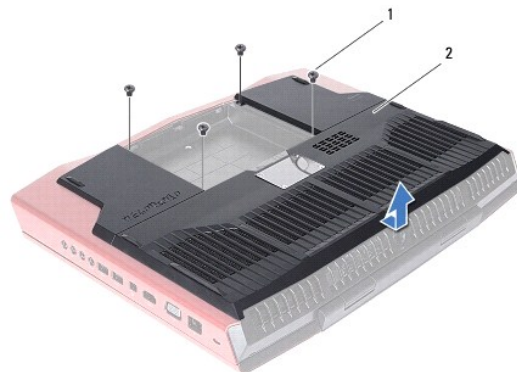
Alienware M18x Service Manual

- [Removing the Base Cover](#)
- [Replacing the Base Cover](#)

- WARNING:** Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.
- CAUTION:** To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on your computer).
- CAUTION:** Only a certified service technician should perform repairs on your computer. Damage due to servicing that is not authorized by Dell is not covered by your warranty.
- CAUTION:** To help prevent damage to the system board, remove the main battery (see [Removing the Battery Pack](#)) before working inside the computer.
-

Removing the Base Cover

1. Follow the instructions in [Before You Begin](#).
2. Remove the battery pack (see [Removing the Battery Pack](#)).
3. Remove the four screws that secure the base cover to the computer base.
4. Slide the base cover towards the rear of the computer, lift it up, and remove it from the computer.



1	screws (4)	2	base cover
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Replacing the Base Cover





1. Follow the instructions in [Before You Begin](#).
2. Align the tabs on the base cover with the slots on the computer base and slide the base cover into place.
3. Replace the four screws that secure the base cover to the computer base.
4. Replace the battery pack (see [Replacing the Battery Pack](#)).

- CAUTION:** Before turning on the computer, replace all screws and ensure that no stray screws remain inside the computer. Failure to do so may result in damage to the computer.
-

Battery Pack

Alienware M18x Service Manual

- [Removing the Battery Pack](#)
- [Replacing the Battery Pack](#)

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-  **CAUTION:** To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on your computer).
-  **CAUTION:** Only a certified service technician should perform repairs on your computer. Damage due to servicing that is not authorized by Dell is not covered by your warranty.
-  **CAUTION:** To avoid damage to the computer, use only the battery designed for this particular Alienware computer. Do not use batteries designed for other Alienware computers.
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Removing the Battery Pack

1. Follow the instructions in [Before You Begin](#).
2. Shut down the computer and turn it over.
3. Slide the battery latch to the unlock position. The battery pack pops up.
4. Lift and slide the battery pack away from the battery bay.



1	battery pack	2	battery latch
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Replacing the Battery Pack

-  **CAUTION:** To avoid damage to the computer, use only the battery designed for this particular Alienware computer.
1. Follow the instructions in [Before You Begin](#).
 2. Align the tabs on the battery with the slots on the battery bay and snap the battery into place.
-

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Before You Begin

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- [Recommended Tools](#)
- [Turning Off Your Computer](#)
- [Before Working Inside Your Computer](#)

This manual provides procedures for removing and installing the components in your computer. Unless otherwise noted, each procedure assumes that the following conditions exist:

- 1 You have performed the steps in [Turning Off Your Computer](#) and [Before Working Inside Your Computer](#).
- 1 You have read the safety information that shipped with your computer.
- 1 A component can be replaced or—if purchased separately—installed by performing the removal procedure in reverse order.


Recommended Tools

The procedures in this document may require the following tools:

- 1 Small flat-blade screwdriver
- 1 Phillips screwdriver
- 1 Plastic scribe
- 1 BIOS executable update program available at support.dell.com

Turning Off Your Computer

 **CAUTION:** To avoid losing data, save and close all open files and exit all open programs before you turn off your computer.


1. Save and close all open files and exit all open programs.
2. Click **Start** , and then click **Shut Down**.


The computer turns off after the operating system shutdown process finishes.


3. Ensure that the computer and any attached devices are turned off. If your computer and attached devices did not automatically turn off when you shut down your operating system, press and hold the power button for at least 8 to 10 seconds until the computer turns off.

Before Working Inside Your Computer


Use the following safety guidelines to help protect your computer from potential damage and to help to ensure your own personal safety.


 **WARNING:** Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.

 **CAUTION:** To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on your computer).

 **CAUTION:** Handle components and cards with care. Do not touch the components or contacts on a card. Hold a card by its edges or by its metal mounting bracket. Hold a component such as a processor by its edges, not by its pins.

 **CAUTION:** Only a certified service technician should perform repairs on your computer. Damage due to servicing that is not authorized by Dell™ is not covered by your warranty.

 **CAUTION:** When you disconnect a cable, pull on its connector or on its pull-tab, not on the cable itself. Some cables have connectors with locking tabs; if you are disconnecting this type of cable, press in on the locking tabs before you disconnect the cable. As you pull connectors apart, keep them evenly aligned to avoid bending any connector pins. Also, before you connect a cable, ensure that both connectors are correctly oriented and aligned.


 **CAUTION:** To avoid damaging the computer, perform the following steps before you begin working inside the computer.

1. Ensure that the work surface is flat and clean to prevent the computer cover from being scratched.

2. Turn off your computer (see [Turning Off Your Computer](#)).

 **CAUTION:** To disconnect a network cable, first unplug the cable from your computer and then unplug the cable from the network device.

3. Disconnect all telephone or network cables from the computer.
4. Press and eject any installed cards from the Media-Card Reader.
5. Disconnect your computer and all attached devices from their electrical outlets.
6. Disconnect all attached devices from your computer.

 **CAUTION:** To help prevent damage to the system board, remove the main battery (see [Removing the Battery Pack](#)) before working inside the computer.

7. Remove the battery pack (see [Removing the Battery Pack](#)).
8. Turn the computer top-side up, open the display, and press the power button to ground the system board.

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System Setup

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Configuring the System Setup

Configuring the System Setup

The System Setup options allow you to:


- 1 Change the system configuration information after you add, change or remove any hardware in your laptop.
- 1 Set or change a user-selectable option.
- 1 View the installed amount of memory or set the type of hard drive installed.

Before you use System Setup, it is recommended that you write down the current System Setup information for future reference.


 **CAUTION:** Do not change the settings in System Setup unless you are an expert computer user. Certain changes can cause your computer to work incorrectly.

Entering System Setup

1. Turn on (or restart) your laptop.

 **NOTE:** Keyboard failure may result when a key on the keyboard is held down for extended periods of time. To avoid possible keyboard failure, press and release <F2> in even intervals until the System Setup screen appears.

2. While the laptop is booting, press <F2> immediately before the operating system logo appears to access the **BIOS Setup Utility**. If an error occurs during POST (Power On Self Test), you may also enter the **BIOS Setup Utility** by pressing <F2> when prompted.


 **NOTE:** If you wait too long and the operating system logo appears, continue to wait until you see the Microsoft Windows desktop, then shut down your laptop and try again.

System Setup Screens

The **BIOS Setup Utility** window displays current or changeable configuration information for your laptop. Information is divided into five menus: **Main**, **Advanced**, **Security**, **Boot**, and **Exit**.

Key functions appear at the bottom of the **BIOS Setup Utility** window and lists keys and their functions within the active field.

System Setup Options

 **NOTE:** Depending on your computer and installed devices, the items listed in this section may not appear, or may not appear exactly as listed.

Main Menu	
System Time (hh:mm:ss)	Displays the system time.
System Date (mm/dd/yyyy)	Displays the system date.
Alienware	Displays the model number of your computer.
Service Tag	Displays the service tag of your computer.
BIOS Version	Displays the BIOS version.
EC Version	Displays the EC firmware version.
ME version	Displays the Intel ME firmware version.
CPU	Displays the type of processor installed.
CPU Frequency	Displays the speed of the processor.
CPU L3 Cache	Displays the processor cache size.
CPUID	Displays the ID of the processor.
Integrated Graphics	Displays the integrated graphics.
Discrete Graphics	Displays the discrete graphics.
Total Memory	Displays the total memory available in your computer.

Memory Bank 0	Displays the memory size installed in DIMM A.
Memory Bank 1	Displays the memory size installed in DIMM B.
Memory Bank 2	Displays the memory size installed in DIMM C.
Memory Bank 3	Displays the memory size installed in DIMM D.
Advanced Menu	
Intel SpeedStep	Allows you to enable or disable the Intel SpeedStep technology. Disabling this feature may improve performance, but will greatly reduce battery life.
Virtualization	Allows you to enable or disable the Intel Virtualization technology.
USB Emulation	Allows you to enable or disable the USB emulation feature. This feature defines how the BIOS, in the absence of a USB-aware operating system, handles USB devices. USB emulation is always enabled during POST. NOTE: You cannot boot any type of USB device (floppy, hard drive, or memory key) when this option is off.
USB Wake Support	Allows you to enable USB devices to wake the computer from standby or to disable the USB wake support feature. NOTE: If USB Powershare is enabled, a device connected to the USB Powershare connector may not wake the computer.
USB Power Share	Allows you to charge USB devices when the computer is turned off or in standby mode. <ul style="list-style-type: none"> 1 AC Only: Charge USB devices when connected to AC adapter only. 1 AC and Battery: Charge USB devices when connected to AC adapter and when the computer is running on battery. 1 Disabled: Disables USB Powershare.
Integrated Network	Allows you to enable or disable the on-board LAN controller. <ul style="list-style-type: none"> 1 Disabled: Internal LAN is disabled and is not visible to the operating system. 1 Enabled: Internal LAN is enabled.
High Definition Audio	Allows you to enable or disable the internal high definition audio device. <ul style="list-style-type: none"> 1 Disabled: The internal audio device is disabled and is not visible to the operating system. 1 Enabled: The internal audio device is enabled.
SD Card Reader	Allows you to enable or disable the internal SD card reader.
CPU Turbo Mode	Allows you to enable or disable the Intel CPU turbo mode performance option.
Performance Options	Allows you to configure fields in the Performance Options sub-menu (for more information, see Advanced Menu—Performance Options).
SATA Operation	Allows you to configure the operating mode of the integrated SATA hard drive controller. <ul style="list-style-type: none"> 1 AHCI: SATA is configured for AHCI mode. 1 RAID: STAT is configured for RAID mode.
SATA HARD DRIVE 1	Displays the installed primary SATA hard drive model.
SATA HARD DRIVE 2	Displays the installed secondary SATA hard drive model.
Adapter Warnings	<ul style="list-style-type: none"> 1 Allows you to choose if the computer should display warning messages when you use AC adapters that are not supported by your computer. 1 Enabled: BIOS will detect unsupported AC adapters and display an error on the screen.
Charger Behavior	Allows you to enable or disable battery charging.
Primary Display	Allows you to choose a primary display
Advanced Menu—Performance Options	
Overclocking Feature	Allows you to enable or disable the global overclocking feature. <ul style="list-style-type: none"> 1 Disabled: The overclocking feature is disabled. 1 Enabled: Displays additional overclocking options.
Non-Turbo Flex Support	Allows you to modify the CPU flex ratio with Turbo Mode disabled.
Flex Ratio Override	Appears when Non-Turbo Flex is enabled and allows you to specify the flex ratio for all CPU cores.
Extreme Edition	Allows Extreme Edition CPUs to adjust the flex ratio in a Turbo Mode environment that allows each individual core ratio to be modified.
Extreme Edition Core	Allows you to modify the flex ratio of individual cores physically present in the CPU.

Ratio Limits	
Memory Override Support	<p>Allows you to enable or disable the memory override option support.</p> <ul style="list-style-type: none"> 1 Disabled: The memory override support is disabled. 1 Enabled: Displays additional memory override support options.
Memory Voltage	Allows you to modify memory voltage.
Memory Frequency	Allows you to modify memory frequency.
DIMM Profile (XMP)	Allows you to configure different XMP options.
Override Turbo Settings	Allows you to override CPU Turbo Mode settings.
Long Duration PWR Limit	<p>Allows you to specify the Turbo Mode power limit 1 in Watts.</p> <p>Indicates the time window over which TDP value should be maintained. A value of 0 programs this value to the fused limit.</p>
Long Duration Time Window	Power Limit 1 time value in seconds.
Short Duration PWR Limit	Allows you to enable or disable the Short Duration Power Limit.
Short Duration	Turbo Mode Power Limit 2 value in Watts.
PWR Limit	A value of 0 programs this value to 1.25 x TDP.
Wireless Menu	
Bluetooth	<p>Allows you to enable or disable the internal Bluetooth device.</p> <ul style="list-style-type: none"> 1 Disabled: The internal Bluetooth device is disabled and is not visible to the operating system. 1 Enabled: The internal Bluetooth device is enabled.
Wireless Network	<p>Allows you to enable or disable the internal wireless device.</p> <ul style="list-style-type: none"> 1 Disabled: The internal wireless device is disabled and is not visible to the operating system. 1 Enabled: The internal wireless device is enabled.
DMC	Allows you to enable or disable the internal DMC device.
Wireless Switch/Hotkey	Allows you to disable all internal wireless devices.
Security Menu	
Supervisor Password	Displays if the supervisor password is clear or set.
User Password	Displays if the user password is clear or set.
Set Service Tag	<p>Displays the service tag of the computer when the service tag is present.</p> <p>Displays a field to input the service tag manually when the service tag is absent.</p>
Set Supervisor Password	Allows you to set the supervisor password. The supervisor password controls access to the system setup utility.
Set User Password	Allows you to set the user password. The user password controls access to the computer at boot.
Computrace	Allows you to enable or disable Computrace security feature.
Boot Menu	
<p>Use the up or down arrow keys to change the boot device priority. You can choose from:</p> <ul style="list-style-type: none"> 1 Hard Drive 1 USB Storage 1 CD/DVD/BD 1 Removal Devices 1 Network 	
Exit Menu	
Exit Saving Changes	Allows you to exit System Setup and save your changes to CMOS.
Save Change Without Exit	Allows you to remain in System Setup and save your changes to CMOS.
Exit Discarding Changes	Allows you to exit System Setup and load previous values from CMOS for all Setup items.
Load Optimal Defaults	Allows you to load default values for all Setup items.
Discard Changes	Allows you to load previous values from CMOS for all Setup items.

Internal Card With Bluetooth Wireless Technology

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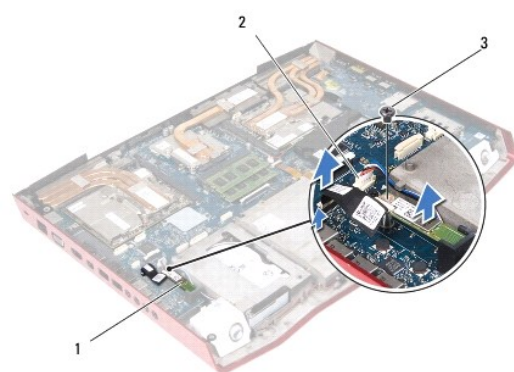
- [Removing the Bluetooth Card](#)
- [Replacing the Bluetooth Card](#)

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- CAUTION:** To help prevent damage to the system board, remove the main battery (see [Removing the Battery Pack](#)) before working inside the computer.

If you ordered a card with Bluetooth wireless technology with your computer, it is already installed.

Removing the Bluetooth Card

1. Follow the instructions in [Before You Begin](#).
2. Remove the battery pack (see [Removing the Battery Pack](#)).
3. Remove the base cover (see [Removing the Base Cover](#)).
4. Remove the center control cover (see [Removing the Center Control Cover](#)).
5. Remove the keyboard (see [Removing the Keyboard](#)).
6. Remove the macro keyboard (see [Removing the Macro Keyboard](#)).
7. Remove the display assembly (see [Removing the Display Assembly](#)).
8. Follow the instructions from [step 10](#) to [step 14](#) in [Removing the Palm Rest](#).
9. Disconnect the Bluetooth-card cable from the connector on the system board.
10. Remove the screw that secures the Bluetooth card to the system board.




1	Bluetooth card	2	Bluetooth-card cable connector
3	screw		

11. Lift the Bluetooth card away from the system board.

Replacing the Bluetooth Card

1. Follow the instructions in [Before You Begin](#).
2. Align the screw hole on the Bluetooth card with the screw hole on the system board.
3. Replace the screw that secures the Bluetooth card to the system board.
4. Connect the Bluetooth-card cable to the connector on the system board.
5. Follow the instructions from [step 4](#) to [step 7](#) in [Replacing the Palm Rest](#).
6. Replace the display assembly (see [Replacing the Display Assembly](#)).
7. Replace the macro keyboard (see [Replacing the Macro Keyboard](#)).
8. Replace the keyboard (see [Replacing the Keyboard](#)).
9. Replace the center control cover (see [Replacing the Center Control Cover](#)).
10. Replace the base cover (see [Replacing the Base Cover](#)).
11. Replace the battery pack (see [Replacing the Battery Pack](#)).

 **CAUTION:** Before turning on the computer, replace all screws and ensure that no stray screws remain inside the computer. Failure to do so may result in damage to the computer.

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Coin-Cell Battery

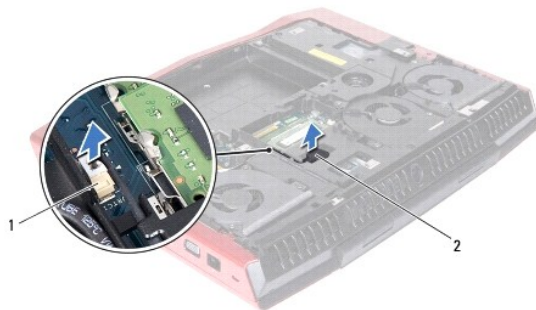
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- [Removing the Coin-Cell Battery](#)
- [Replacing the Coin-Cell Battery](#)

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-

Removing the Coin-Cell Battery

1. Follow the instructions in [Before You Begin](#).
2. Remove the battery pack (see [Removing the Battery Pack](#)).
3. Remove the base cover (see [Removing the Base Cover](#)).
4. Disconnect the coin-cell battery cable from the connector on the system board.



1	coin-cell battery cable connector	2	coin-cell battery
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5. Remove the coin-cell battery cable from the routing guides on the computer base.
 6. Pry up the coin-cell battery from the slot on the system board.
-

Replacing the Coin-Cell Battery

1. Follow the instructions in [Before You Begin](#).
2. Place the coin-cell battery into the slot and press gently to adhere it to the computer base.
3. Route the coin-cell battery cable through the routing guides on the computer base.
4. Connect the coin-cell battery cable to the connector on the system board.
5. Replace the base cover (see [Replacing the Base Cover](#)).
6. Replace the battery pack (see [Replacing the Battery Pack](#)).

△ **CAUTION:** Before turning on the computer, replace all screws and ensure that no stray screws remain inside the computer. Failure to do so may result in damage to the computer.

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Processor Module

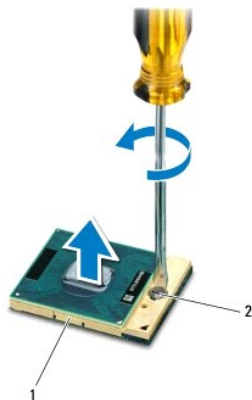
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- [Removing the Processor Module](#)
- [Replacing the Processor Module](#)


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- CAUTION:** Only a certified service technician should perform repairs on your computer. Damage due to servicing that is not authorized by Dell is not covered by your warranty.
- CAUTION:** To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on your computer).
- CAUTION:** To prevent intermittent contact between the ZIF-socket cam screw and the processor module when removing or replacing the processor, press to apply slight pressure to the center of the processor module while turning the cam screw.
- CAUTION:** To avoid damage to the processor module, hold the screwdriver so that it is perpendicular to the processor module when turning the cam screw.
- CAUTION:** To help prevent damage to the system board, remove the main battery (see [Removing the Battery Pack](#)) before working inside the computer.
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Removing the Processor Module

1. Follow the instructions in [Before You Begin](#).
2. Remove the battery pack (see [Removing the Battery Pack](#)).
3. Remove the base cover (see [Removing the Base Cover](#)).
4. Remove the center control cover (see [Removing the Center Control Cover](#)).
5. Remove the keyboard (see [Removing the Keyboard](#)).
6. Remove the macro keyboard (see [Removing the Macro Keyboard](#)).
7. Remove the display assembly (see [Removing the Display Assembly](#)).
8. Follow the instructions from [step 10](#) to [step 16](#) in [Removing the Palm Rest](#).
9. Remove the processor heat-sink (see [Removing the Processor Heat-Sink](#)).
10. To loosen the ZIF socket, use a small, flat-blade screwdriver to rotate the ZIF-socket cam screw counterclockwise until it comes to the cam stop.




1	ZIF socket	2	ZIF-socket cam screw
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 **CAUTION:** To ensure maximum cooling for the processor module, do not touch the heat-transfer areas on the processor thermal cooling assembly. The oils in your skin can reduce the heat transfer capability of the thermal pads.


 **CAUTION:** When removing the processor module, lift the module straight up. Be careful not to bend the pins on the processor module.

11. Lift the processor module from the ZIF socket.

Replacing the Processor Module

 **NOTE:** If a new processor module is installed, you will receive a new thermal-cooling assembly, which will include an affixed thermal pad, or you will receive a new thermal pad along with documentation to illustrate proper installation.


1. Follow the instructions in [Before You Begin](#).
2. Align the pin-1 corner of the processor module with the pin-1 corner of the ZIF socket, then place the processor module.

 **NOTE:** The pin-1 corner of the processor module has a triangle that aligns with the triangle on the pin-1 corner of the ZIF socket.

When the processor module is properly seated, all four corners are aligned at the same height. If one or more corners of the module are higher than the others, the module is not seated properly.

 **CAUTION:** To avoid damage to the processor module, hold the screwdriver perpendicular to the processor module when turning the cam screw.

3. Tighten the ZIF socket by turning the cam screw clockwise to secure the processor module to the system board.
4. Replace the processor heat-sink (see [Replacing the Processor Heat-Sink](#)).
5. Follow the instructions from [step 4](#) to [step 7](#) in [Replacing the Palm Rest](#).
6. Replace the display assembly (see [Replacing the Display Assembly](#)).
7. Replace the macro keyboard (see [Replacing the Macro Keyboard](#)).
8. Replace the keyboard (see [Replacing the Keyboard](#)).
9. Replace the center control cover (see [Replacing the Center Control Cover](#)).
10. Replace the base cover (see [Replacing the Base Cover](#)).
11. Replace the battery pack (see [Replacing the Battery Pack](#)).

 **CAUTION:** Before turning on the computer, replace all screws and ensure that no stray screws remain inside the computer. Failure to do so may result in damage to the computer.

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Processor Heat-Sink

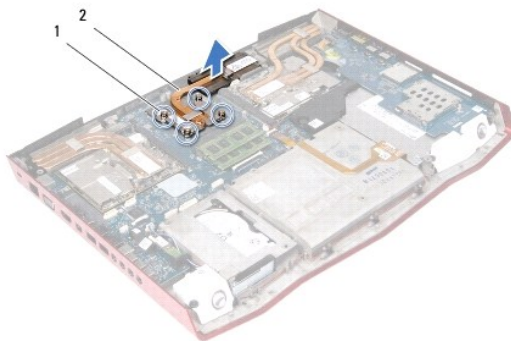
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- [Removing the Processor Heat-Sink](#)
- [Replacing the Processor Heat-Sink](#)

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- WARNING:** If you remove the processor heat-sink from the computer when the heat sink is hot, do not touch the metal housing of the processor heat-sink.
- CAUTION:** Only a certified service technician should perform repairs on your computer. Damage due to servicing that is not authorized by Dell is not covered by your warranty.
- CAUTION:** To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on your computer).
- CAUTION:** To help prevent damage to the system board, remove the main battery (see [Removing the Battery Pack](#)) before working inside the computer.
-

Removing the Processor Heat-Sink

1. Follow the instructions in [Before You Begin](#).
2. Remove the battery pack (see [Removing the Battery Pack](#)).
3. Remove the base cover (see [Removing the Base Cover](#)).
4. Remove the center control cover (see [Removing the Center Control Cover](#)).
5. Remove the keyboard (see [Removing the Keyboard](#)).
6. Remove the macro keyboard (see [Removing the Macro Keyboard](#)).
7. Remove the display assembly (see [Removing the Display Assembly](#)).
8. Remove the palm-rest assembly (see [Removing the Palm Rest](#)).
9. In sequential order (indicated on the processor heat-sink), loosen the four captive screws that secure the processor heat-sink to the system board.




1	captive screws (4)	2	processor heat-sink
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10. Carefully lift the processor heat-sink out of the computer base.
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Replacing the Processor Heat-Sink

 **CAUTION:** Incorrect alignment of the processor heat-sink can damage the processor.

 **NOTE:** The original thermal grease can be reused if the original processor heat-sink is reinstalled. If the processor heat-sink is replaced, use the thermal grease provided in the kit to ensure that thermal conductivity is achieved.

1. Follow the instructions in [Before You Begin](#).
2. Align the four captive screws on the processor heat-sink with the screw holes on the system board and tighten the screws in sequential order (indicated on the processor heat-sink).
3. Replace the palm-rest assembly (see [Replacing the Palm Rest](#)).
4. Replace the display assembly (see [Replacing the Display Assembly](#)).
5. Replace the macro keyboard (see [Replacing the Macro Keyboard](#)).
6. Replace the keyboard (see [Replacing the Keyboard](#)).
7. Replace the center control cover (see [Replacing the Center Control Cover](#)).
8. Replace the base cover (see [Replacing the Base Cover](#)).
9. Replace the battery pack (see [Replacing the Battery Pack](#)).

 **CAUTION:** Before turning on the computer, replace all screws and ensure that no stray screws remain inside the computer. Failure to do so may result in damage to the computer.

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Processor Heat-Sink Fan

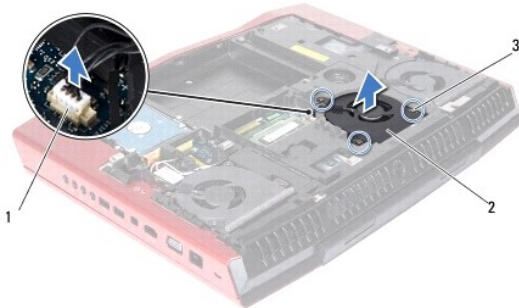
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- [Removing the Processor Heat-Sink Fan](#)
- [Replacing the Processor Heat-Sink Fan](#)

- WARNING:** Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.
- WARNING:** The processor heat-sink may be very hot during normal operation. Ensure that it has had sufficient time to cool before you touch it.
- CAUTION:** Only a certified service technician should perform repairs on your computer. Damage due to servicing that is not authorized by Dell is not covered by your warranty.
- CAUTION:** To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on your computer).
- CAUTION:** To help prevent damage to the system board, remove the main battery (see [Removing the Battery Pack](#)) before working inside the computer.

Removing the Processor Heat-Sink Fan

1. Follow the instructions in [Before You Begin](#).
2. Remove the battery pack (see [Removing the Battery Pack](#)).
3. Remove the base cover (see [Removing the Base Cover](#)).
4. Disconnect the processor heat-sink fan cable from the connector on the system board.
5. Loosen the three captive screws that secure the processor heat-sink fan to the computer base.



1	processor heat-sink fan cable connector	2	processor heat-sink fan
3	captive screws (3)		

6. Lift the processor heat-sink fan along with the cable away from the computer base.

Replacing the Processor Heat-Sink Fan

1. Follow the instructions in [Before You Begin](#).
2. Align the screw holes on the processor heat-sink fan with the screw holes on the computer base.
3. Tighten the three captive screws that secure the processor heat-sink fan to the computer base.
4. Connect the processor heat-sink fan cable to the connector on the system board.
5. Replace the base cover (see [Replacing the Base Cover](#)).

6. Replace the battery pack (see [Replacing the Battery Pack](#)).



CAUTION: Before turning on the computer, replace all screws and ensure that no stray screws remain inside the computer. Failure to do so may result in damage to the computer.

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Display Assembly

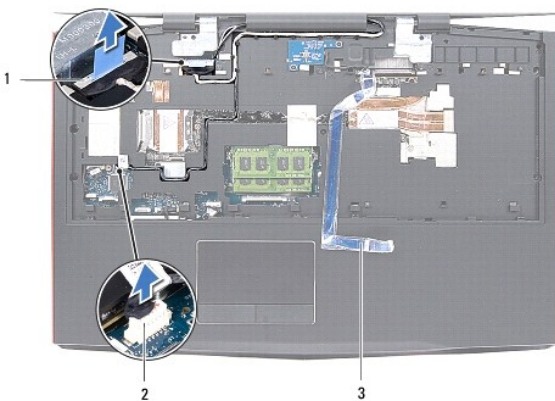
Alienware M18x Service Manual

- [Removing the Display Assembly](#)
- [Replacing the Display Assembly](#)

- WARNING:** Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.
- CAUTION:** To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on your computer).
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- CAUTION:** To help prevent damage to the system board, remove the main battery (see [Removing the Battery Pack](#)) before working inside the computer.

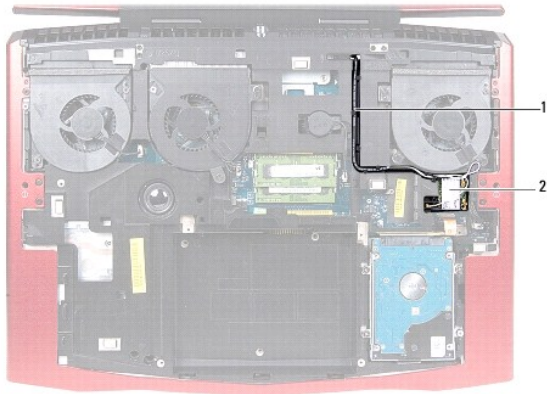
Removing the Display Assembly

1. Follow the instructions in [Before You Begin](#).
2. Remove the battery pack (see [Removing the Battery Pack](#)).
3. Remove the base cover (see [Removing the Base Cover](#)).
4. Remove the center control cover (see [Removing the Center Control Cover](#)).
5. Remove the keyboard (see [Removing the Keyboard](#)).
6. Remove the macro keyboard (see [Removing the Macro Keyboard](#)).
7. Using the pull-tab, pull the display cable to disconnect the display cable from the connector on the system board.
8. Disconnect and peel off the video-card connector cable from the connector on the system board.
9. Disconnect the LED-logo board cable from the connector on the system board.



1	display-cable connector	2	LED logo-board cable
3	video-card connector cable		

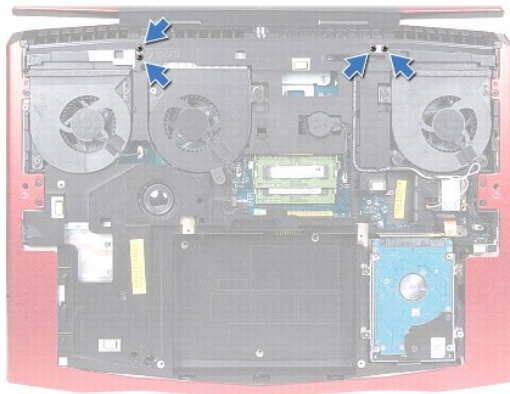
10. Close the display and turn the computer over.
11. Disconnect the antenna cables from the Mini-Card (see [Removing the Mini-Card](#)).



1	Mini-Card cable routing	2	Mini-Card
---	-------------------------	---	-----------

12. Note the routing of the antenna cables, and then remove the cables from the routing guides on the computer base.

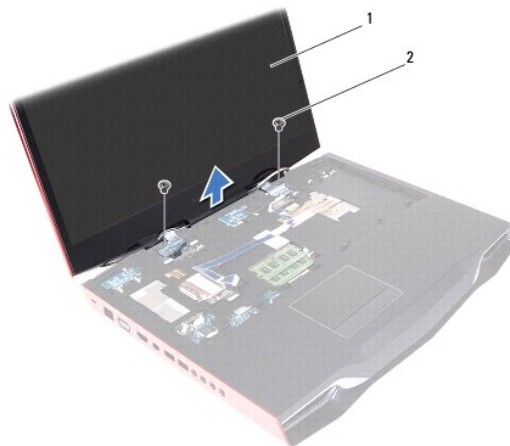
13. Remove the four screws that secure the display assembly on the computer base.



14. Turn the computer over and open the display.

15. Note the routing of the display cable and LED-logo board cable, and then remove the cables from the routing guides on the palm-rest assembly.

16. Remove the two screws, on the display hinges, that secure the display assembly to the computer base.




1	display assembly	2	screws (2)
---	------------------	---	------------

17. Gently slide out the antenna cables through the slot on the computer base.
 18. Move the display to a perpendicular position to the computer base, and then lift the display assembly off the computer.
-

Replacing the Display Assembly

1. Follow the instructions in [Before You Begin](#).
2. Place the display assembly in position and replace the two screws, on the display hinges, that secure the display assembly to the computer base.
3. Route the display cable and LED-logo board cable through the routing guides on the palm-rest assembly.
4. Connect the display cable, video-card connector cable, and LED-logo board cable to the respective connectors on the system board.
5. Slide the Mini-Card antenna cables through the slot on the computer base.
6. Close the display and turn the computer over.
7. Route the Mini-Card antenna cables through the routing guides on the computer base.
8. Connect the Mini-Card antenna cables to the Mini-Card (see [Replacing the Mini-Card](#)).
9. Turn the computer over.
10. Replace the macro keyboard (see [Replacing the Macro Keyboard](#)).
11. Replace the keyboard (see [Replacing the Keyboard](#)).
12. Replace the center control cover (see [Replacing the Center Control Cover](#)).
13. Replace the base cover (see [Replacing the Base Cover](#)).
14. Replace the battery pack (see [Replacing the Battery Pack](#)).

 **CAUTION:** Before turning on the computer, replace all screws and ensure that no stray screws remain inside the computer. Failure to do so may result in damage to the computer.

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Flashing the BIOS

Alienware M18x Service Manual

The BIOS may require flashing when an update is available or when replacing the system board.

To flash the BIOS:

1. Turn on the computer.
2. Go to support.dell.com/support/downloads.
3. Locate the BIOS update file for your computer:


 **NOTE:** The Service Tag for your computer is located on a label at the bottom of the computer.

If you have your computer's Service Tag:

- a. Click **Enter a Tag**.
- b. Enter your computer's Service Tag in the **Enter a service tag:** field, click **Go**, and proceed to [step 4](#).

If you do not have your computer's Service Tag:

- a. Click **Select Model**.
- b. Select the type of product in the **Select Your Product Family** list.
- c. Select the product brand in the **Select Your Product Line** list.
- d. Select the product model number in the **Select Your Product Model** list.











 **NOTE:** If you have selected a different model and want to start over again, click **Start Over** on the top right of the menu.

- e. Click **Confirm**.
4. A list of results appears on the screen. Click **BIOS**.
5. Click **Download Now** to download the latest BIOS file.
The **File Download** window appears.
6. Click **Save** to save the file on your desktop. The file downloads to your desktop.
7. Click **Close** if the **Download Complete** window appears.
The file icon appears on your desktop and is titled the same as the downloaded BIOS update file.
8. Double-click the file icon on the desktop and follow the instructions on the screen.

Hard Drive(s)

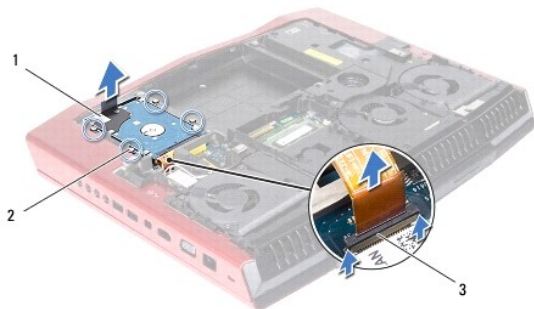
Alienware M18x Service Manual

- [Removing the Hard Drive\(s\)](#)
- [Replacing the Hard Drive\(s\)](#)

-  **WARNING:** If you remove the hard drive from the computer when the drive is hot, do not touch the metal housing of the hard drive.
-  **WARNING:** Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.
-  **CAUTION:** To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on your computer).
-  **CAUTION:** To help prevent damage to the system board, remove the main battery (see [Removing the Battery Pack](#)) before working inside the computer.
-  **CAUTION:** To prevent data loss, turn off your computer (see [Turning Off Your Computer](#)) before removing the hard-drive assembly. Do not remove the hard drive while the computer is On or in Sleep state.
-  **CAUTION:** Hard drives are extremely fragile. Exercise care when handling the hard drive.
-  **CAUTION:** Only a certified service technician should perform repairs on your computer. Damage due to servicing that is not authorized by Dell is not covered by your warranty.
-  **CAUTION:** When you disconnect a cable, pull on its connector or on its pull-tab, not on the cable itself. Some cables have connectors with locking tabs; if you are disconnecting this type of cable, press in on the locking tabs before you disconnect the cable. As you pull connectors apart, keep them evenly aligned to avoid bending any connector pins. Also, before you connect a cable, ensure that both connectors are correctly oriented and aligned.
-  **NOTE:** Dell or Alienware does not guarantee compatibility or provide support for hard drives from sources other than Dell or Alienware.
-  **NOTE:** If you are installing a hard drive from a source other than Dell or Alienware, you need to install an operating system, drivers, and utilities on the new hard drive.

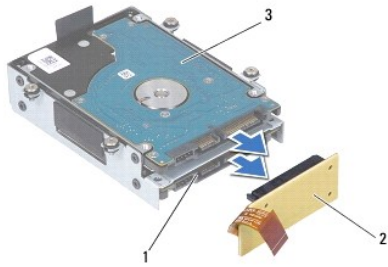
Removing the Hard Drive(s)

1. Follow the instructions in [Before You Begin](#).
2. Remove the battery pack (see [Removing the Battery Pack](#)).
3. Remove the base cover (see [Removing the Base Cover](#)).
4. Lift the connector latch that secures the hard-drive cable to the connector on the system board, and then disconnect the hard-drive cable from the connector on the system board.
5. Loosen the four captive screws that secure the hard-drive assembly to the computer base.
6. Using the pull-tab, lift the hard-drive assembly out of the computer base.



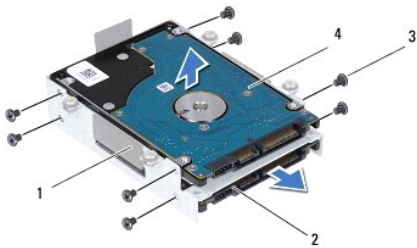
1	hard-drive assembly	2	captive screws (4)
3	hard-drive cable connector		

7. Disconnect the interposer from the hard drives.



1	secondary hard drive (HDD 1)	2	interposer
3	primary hard drive (HDD 0)		

8. Remove the four screws that secure the primary hard drive (HDD 0) and lift the hard drive out of the hard-drive bracket.
9. Remove the four screws that secure the secondary hard drive (HDD 1) and slide the hard drive out of the hard-drive bracket.




1	hard-drive bracket	2	secondary hard drive (HDD 1)
3	screws (8)	4	primary hard drive (HDD 0)

CAUTION: When the hard drive is not in the computer, store it in protective antistatic packaging (see "Protecting Against Electrostatic Discharge" in the safety instructions that shipped with your computer).

Replacing the Hard Drive(s)

1. Follow the instructions in [Before You Begin](#).
2. Remove the new drive(s) from its packaging.
Save the original packaging for storing or shipping the hard drive(s).
3. Place the primary hard drive (HDD0) in the hard-drive bracket.
4. If applicable, slide the secondary hard drive into the hard-drive bracket.
5. Replace the four screws that secure the primary hard drive (HDD 0).
6. If applicable, replace the four screws that secure the secondary hard drive (HDD 1) to the hard-drive bracket.
7. Connect the interposer to the hard drives.
8. Place the hard-drive assembly in the computer base.
9. Tighten the four captive screws that secure the hard-drive assembly to the computer base.

10. Connect the hard-drive cable to the connector on the system board and press down on the connector latch to secure the cable.
11. Replace the base cover (see [Replacing the Base Cover](#)).
12. Replace the battery pack (see [Replacing the Battery Pack](#)).

 **CAUTION:** Before turning on the computer, replace all screws and ensure that no stray screws remain inside the computer. Failure to do so may result in damage to the computer.

13. Install the operating system for your computer, if needed.
14. Install the drivers and utilities for your computer, if needed.

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Center Control Cover

Alienware M18x Service Manual

- [Removing the Center Control Cover](#)
- [Replacing the Center Control Cover](#)

WARNING: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.

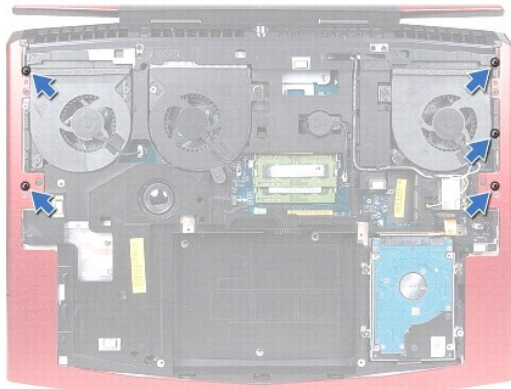
CAUTION: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on your computer).

CAUTION: Only a certified service technician should perform repairs on your computer. Damage due to servicing that is not authorized by Dell is not covered by your warranty.

CAUTION: To help prevent damage to the system board, remove the main battery (see [Removing the Battery Pack](#)) before working inside the computer.

Removing the Center Control Cover

1. Follow the instructions in [Before You Begin](#).
2. Remove the battery pack (see [Removing the Battery Pack](#)).
3. Remove the base cover (see [Removing the Base Cover](#)).
4. Remove the five screws that secure the center control cover to the computer base.



CAUTION: Be extremely careful when removing the center control cover. The cover along with the cable that attaches to it are fragile.

5. Turn the computer over and open the display as far as possible.
6. Gently pry up the center control cover and then ease the tabs on the center control cover out of the slots on the palm-rest assembly.



1	center control cover
---	----------------------

CAUTION: Be extremely careful when removing and handling the center control cover. Failure to do so could result in scratching the display panel.

7. Place the center control cover on the palm rest.
8. Lift the connector latch and disconnect the central control cover cable from the connector on the system board.



1	center control cover cable connector
---	--------------------------------------

9. Lift the center control cover away from the computer.

Replacing the Center Control Cover

1. Follow the instructions in [Before You Begin](#).
2. Slide the central control cover cable into the connector on the system board and press down on the connector latch to secure the cable.
3. Align the tabs on the center control cover with the slots on the palm-rest assembly and snap the center control cover into place.
4. Close the display and turn the computer over.
5. Replace the five screws that secure the center control cover to the computer base.
6. Replace the base cover (see [Replacing the Base Cover](#)).
7. Replace the battery pack (see [Replacing the Battery Pack](#)).

CAUTION: Before turning on the computer, replace all screws and ensure that no stray screws remain inside the computer. Failure to do so may result in damage to the computer.

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Video-Card Heat-Sink Fan(s)

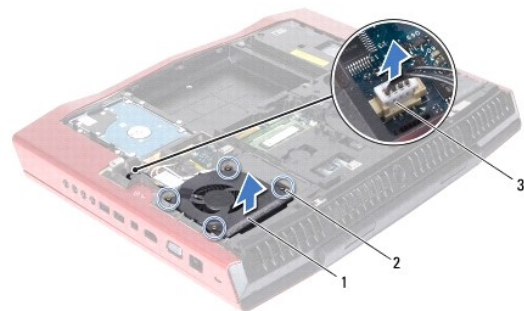
Alienware M18x Service Manual

- [Removing the Video-Card Heat-Sink Fan\(s\)](#)
- [Replacing the Video-Card Heat-Sink Fan\(s\)](#)

- WARNING:** Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.
- WARNING:** The video-card assembly may be very hot during normal operation. Ensure that it has had sufficient time to cool before you touch it.
- CAUTION:** Only a certified service technician should perform repairs on your computer. Damage due to servicing that is not authorized by Dell is not covered by your warranty.
- CAUTION:** To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on your computer).
- CAUTION:** To help prevent damage to the system board, remove the main battery (see [Removing the Battery Pack](#)) before working inside the computer.

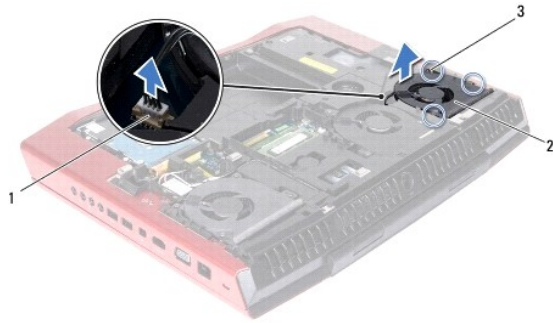
Removing the Video-Card Heat-Sink Fan(s)

1. Follow the instructions in [Before You Begin](#).
2. Remove the battery pack (see [Removing the Battery Pack](#)).
3. Remove the base cover (see [Removing the Base Cover](#)).
4. Disconnect the primary video-card heat-sink fan cable from the connector on the system board.
5. Remove the primary video-card heat-sink fan cable from the routing guides on the computer base.
6. Loosen the four captive screws that secure the primary video-card heat-sink fan to the computer base.



1	primary video-card heat-sink fan	2	captive screws (4)
3	primary video-card heat-sink fan cable connector		

7. Disconnect the secondary video-card heat-sink fan cable from the connector on the system board.
8. Loosen the three captive screws that secure the secondary video-card heat-sink fan to the computer base.



1	secondary video-card heat-sink fan cable connector	2	secondary video-card heat-sink fan
3	captive screws (3)		

9. Lift the video-card heat-sink fan(s) along with the cable away from the computer base.

Replacing the Video-Card Heat-Sink Fan(s)

1. Follow the instructions in [Before You Begin](#).
2. Align the screw holes on the video-card heat-sink fan(s) with the screw holes on the computer base.
3. Tighten the three captive screws that secure the secondary video-card heat-sink fan to the computer base.
4. Tighten the four captive screws that secure the primary video-card heat-sink fan to the computer base.
5. Route the primary video-card heat-sink fan cable through the routing guides on the computer base.
6. Connect the primary video-card heat-sink fan cable to the connector on the system board.
7. Connect the secondary video-card heat-sink fan cable to the connector on the system board.
8. Replace the base cover (see [Replacing the Base Cover](#)).
9. Replace the battery pack (see [Replacing the Battery Pack](#)).

CAUTION: Before turning on the computer, replace all screws and ensure that no stray screws remain inside the computer. Failure to do so may result in damage to the computer.

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Notes, Cautions, and Warnings



NOTE: A NOTE indicates important information that helps you make better use of your computer.




CAUTION: A CAUTION indicates potential damage to hardware or loss of data if instructions are not followed.



WARNING: A WARNING indicates a potential for property damage, personal injury, or death.

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2011-04 Rev. A00

Regulatory model: P12E
Regulatory type: P12E001

I/O Board

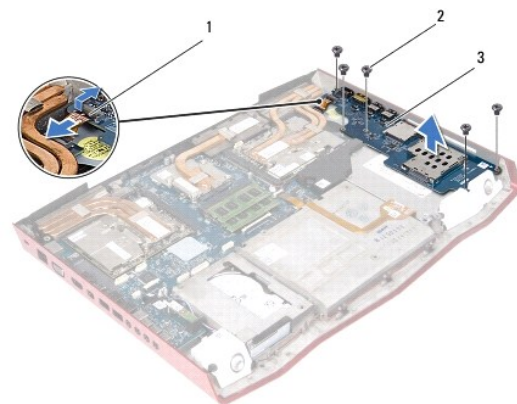
Alienware M18x Service Manual

- [Removing the I/O Board](#)
- [Replacing the I/O Board](#)

- WARNING:** Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.
- CAUTION:** To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on your computer).
- CAUTION:** Only a certified service technician should perform repairs on your computer. Damage due to servicing that is not authorized by Dell is not covered by your warranty.
- CAUTION:** To help prevent damage to the system board, remove the main battery (see [Removing the Battery Pack](#)) before working inside the computer.

Removing the I/O Board

1. Follow the instructions in [Before You Begin](#).
2. Remove any installed card or blank from the Media-Card Reader.
3. Remove the battery pack (see [Removing the Battery Pack](#)).
4. Remove the base cover (see [Removing the Base Cover](#)).
5. Remove the center control cover (see [Removing the Center Control Cover](#)).
6. Remove the keyboard (see [Removing the Keyboard](#)).
7. Remove the macro keyboard (see [Removing the Macro Keyboard](#)).
8. Remove the display assembly (see [Removing the Display Assembly](#)).
9. Follow the instructions from [step 10](#) to [step 16](#) in [Removing the Palm Rest](#).
10. Lift the connector latch and disconnect the I/O board-cable from the connector on the system board.
11. Remove the five screws that secure the I/O board to the computer base.




1	I/O board cable connector	2	screws (5)
3	I/O board		

12. Gently lift the I/O board and ease the connectors on the I/O board out of the slots on the computer.

Replacing the I/O Board

1. Follow the instructions in [Before You Begin](#).
2. Align the connectors on the I/O board with the slots on the computer base and gently press down on the I/O board.
3. Replace the five screws that secure the I/O board to the computer base.
4. Connect the I/O-board cable to the connector on the system board and press down on the connector latch to secure the cable.
5. Follow the instructions from [step 4](#) to [step 7](#) in [Replacing the Palm Rest](#).
6. Replace the display assembly (see [Replacing the Display Assembly](#)).
7. Replace the macro keyboard (see [Replacing the Macro Keyboard](#)).
8. Replace the keyboard (see [Replacing the Keyboard](#)).
9. Replace the center control cover (see [Replacing the Center Control Cover](#)).
10. Replace the base cover (see [Replacing the Base Cover](#)).
11. Replace the battery pack (see [Replacing the Battery Pack](#)).
12. Replace any cards or blank that you removed from the Media-Card Reader.

 **CAUTION:** Before turning on the computer, replace all screws and ensure that no stray screws remain inside the computer. Failure to do so may result in damage to the computer.

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Keyboard

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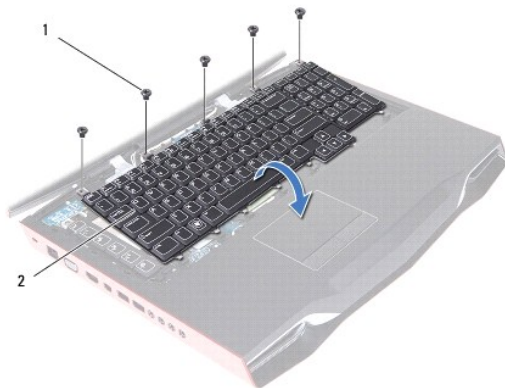
- [Removing the Keyboard](#)
- [Replacing the Keyboard](#)

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- CAUTION:** Only a certified service technician should perform repairs on your computer. Damage due to servicing that is not authorized by Dell is not covered by your warranty.
- CAUTION:** To help prevent damage to the system board, remove the main battery (see [Removing the Battery Pack](#)) before working inside the computer.

Removing the Keyboard

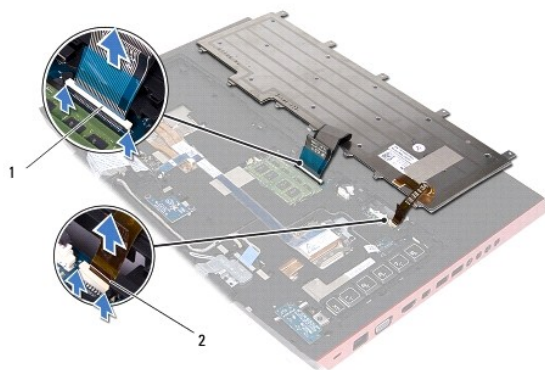
1. Follow the instructions in [Before You Begin](#).
2. Remove the battery pack (see [Removing the Battery Pack](#)).
3. Remove the base cover (see [Removing the Base Cover](#)).
4. Remove the center control cover (see [Removing the Center Control Cover](#)).
5. Remove the five screws that secure the keyboard to the computer base.

- CAUTION:** The keycaps on the keyboard are fragile, easily dislodged, and time-consuming to replace. Be careful when removing and handling the keyboard.
- CAUTION:** Be extremely careful when removing and handling the keyboard. Failure to do so could result in scratching the display panel.



1	screws (5)	2	keyboard
---	------------	---	----------

6. Lift the keyboard and slide the keyboard tabs out of the slots on the palm-rest assembly.
7. Turn the keyboard over and place it on the palm-rest assembly.
8. Lift the connector latches on the connectors on the system board and pull the pull-tab to disconnect the keyboard cable and keyboard-backlight cable.



1	keyboard-cable connector	2	keyboard-backlight cable connector
---	--------------------------	---	------------------------------------

9. Lift the keyboard off the palm-rest assembly.

Replacing the Keyboard

1. Follow the instructions in [Before You Begin](#).
2. Slide the keyboard cable and keyboard-backlight cable into their connectors on the system board, and press down on their connector latches to secure the cables.
3. Slide the tabs on the keyboard into the slots on the palm-rest assembly and lower the keyboard into place.
4. Replace the five screws that secure the keyboard to the computer base.
5. Replace the center control cover (see [Replacing the Center Control Cover](#)).
6. Replace the base cover (see [Replacing the Base Cover](#)).
7. Replace the battery pack (see [Replacing the Battery Pack](#)).





CAUTION: Before turning on the computer, replace all screws and ensure that no stray screws remain inside the computer. Failure to do so may result in damage to the computer.

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Status-Light Board

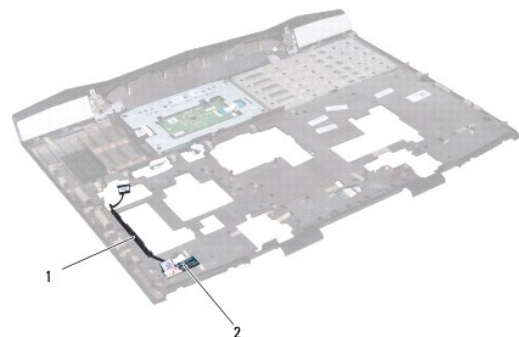
Alienware M18x Service Manual

- [Removing the Status-Light Board](#)
- [Replacing the Status-Light Board](#)

-  **WARNING:** Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.
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-  **CAUTION:** To help prevent damage to the system board, remove the main battery (see [Removing the Battery Pack](#)) before working inside the computer.

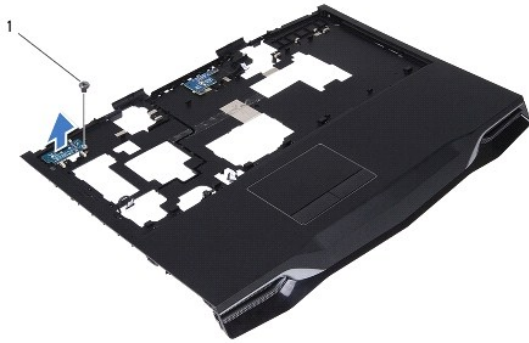
Removing the Status-Light Board

1. Follow the instructions in [Before You Begin](#).
2. Remove the battery pack (see [Removing the Battery Pack](#)).
3. Remove the base cover (see [Removing the Base Cover](#)).
4. Remove the center control cover (see [Removing the Center Control Cover](#)).
5. Remove the keyboard (see [Removing the Keyboard](#)).
6. Remove the macro keyboard (see [Removing the Macro Keyboard](#)).
7. Remove the display assembly (see [Removing the Display Assembly](#)).
8. Follow the instructions from [step 10](#) to [step 16](#) in [Removing the Palm Rest](#).
9. Note the routing of status-light board cable and remove the cable from the routing guides.



1	status-light board cable routing	2	status-light board
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10. Remove the screw that secures the status-light board to the palm-rest assembly.




1	screw
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11. Lift the status-light board off the palm-rest assembly.

Replacing the Status-Light Board

1. Follow the instructions in [Before You Begin](#).
2. Align the slots on the status-light board with the alignment posts on the palm-rest assembly and secure the status-light board in place.
3. Replace the screw that secures the status-light board to the palm-rest assembly.
4. Route the status-light board cable through the routing guides on the palm-rest assembly.
5. Follow the instructions from [step 4](#) to [step 7](#) in [Replacing the Palm Rest](#).
6. Replace the display assembly (see [Replacing the Display Assembly](#)).
7. Replace the macro keyboard (see [Replacing the Macro Keyboard](#)).
8. Replace the keyboard (see [Replacing the Keyboard](#)).
9. Replace the center control cover (see [Replacing the Center Control Cover](#)).
10. Replace the base cover (see [Replacing the Base Cover](#)).
11. Replace the battery pack (see [Replacing the Battery Pack](#)).

 **CAUTION:** Before turning on the computer, replace all screws and ensure that no stray screws remain inside the computer. Failure to do so may result in damage to the computer.

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Macro Keyboard

Alienware M18x Service Manual

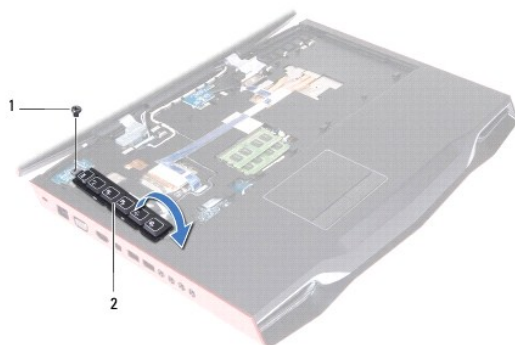
- [Removing the Macro Keyboard](#)
- [Replacing the Macro Keyboard](#)

- WARNING:** Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.
- CAUTION:** To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on your computer).
- CAUTION:** Only a certified service technician should perform repairs on your computer. Damage due to servicing that is not authorized by Dell is not covered by your warranty.
- CAUTION:** To help prevent damage to the system board, remove the main battery (see [Removing the Battery Pack](#)) before working inside the computer.

Removing the Macro Keyboard

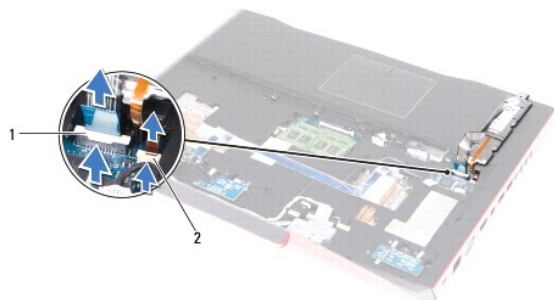
1. Follow the instructions in [Before You Begin](#).
2. Remove the battery pack (see [Removing the Battery Pack](#)).
3. Remove the base cover (see [Removing the Base Cover](#)).
4. Remove the center control cover (see [Removing the Center Control Cover](#)).
5. Remove the screw that secures the macro keyboard to the computer base.

- CAUTION:** The keycaps on the macro keyboard are fragile, easily dislodged, and time-consuming to replace. Be careful when removing and handling the macro keyboard.



1	screw	2	macro keyboard
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6. Lift the macro keyboard and slide the tab on the macro-keyboard out of the slot on the palm-rest assembly.
7. Carefully turn the macro keyboard over and place it on the palm-rest assembly.
8. Lift the connector latches on the connectors on the system board, and pull the pull-tab to disconnect the macro-keyboard cable and macro-keyboard backlight cable from the connectors on the system board.



1	macro-keyboard cable connector	2	macro-keyboard backlight-cable connector
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9. Lift the macro keyboard off the palm-rest assembly.

Replacing the Macro Keyboard

1. Follow the instructions in [Before You Begin](#).
2. Slide the macro-keyboard cable and the macro-keyboard backlight cable into the respective connectors on the system board, and press down on the connector latches to secure the cables.
3. Slide the tab on the macro keyboard into the slot on the palm-rest assembly and lower the macro keyboard into place.
4. Replace the screw that secures the macro keyboard to the computer base.
5. Replace the center control cover (see [Replacing the Center Control Cover](#)).
6. Replace the base cover (see [Replacing the Base Cover](#)).
7. Replace the battery pack (see [Replacing the Battery Pack](#)).

CAUTION: Before turning on the computer, replace all screws and ensure that no stray screws remain inside the computer. Failure to do so may result in damage to the computer.

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Memory Module(s)

Alienware M18x Service Manual

- [Removing the Memory Module\(s\)](#)
- [Replacing the Memory Module\(s\)](#)

- WARNING:** Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.
- CAUTION:** To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on your computer).
- CAUTION:** Only a certified service technician should perform repairs on your computer. Damage due to servicing that is not authorized by Dell is not covered by your warranty.
- CAUTION:** To help prevent damage to the system board, remove the main battery (see [Removing the Battery Pack](#)) before working inside the computer.

You can increase your computer memory by installing memory modules on the system board. See the "Specifications" section in your *Mobile Manual* for information on the type of memory supported by your computer.

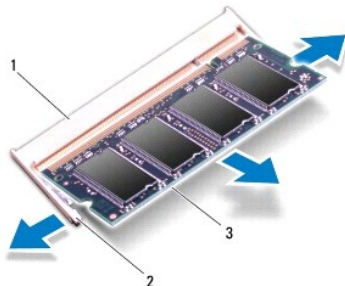
- NOTE:** Memory modules purchased from Dell or Alienware are covered under your computer warranty.
- NOTE:** If you purchased a dual-core processor, your computer supports only memory modules installed in connectors DIMM A and DIMM B.
- NOTE:** Your computer supports up to four memory module connectors. You can access connectors DIMM A and DIMM B by removing the base cover at the bottom of your computer. You can access connectors DIMM C and DIMM D by removing the keyboard.

Removing the Memory Module(s)

1. Follow the instructions in [Before You Begin](#).
2. Remove the battery pack (see [Removing the Battery Pack](#)).
3. Remove the base cover (see [Removing the Base Cover](#)).
4. To remove memory module(s) from connectors DIMM A and DIMM B, go to [step 6](#).
5. To remove memory module(s) from connectors DIMM C and DIMM D:
 - a. Remove the center control cover (see [Removing the Center Control Cover](#)).
 - b. Remove the keyboard (see [Removing the Keyboard](#)).

- CAUTION:** To prevent damage to the memory-module connector, do not use tools to spread the memory module securing clips.

6. Using your fingertips, spread apart the securing clips on each end of the memory-module connector until the memory module pops up.




1	memory-module connector	2	securing clips (2)
3	memory module		


7. Remove the memory module from the memory-module connector.

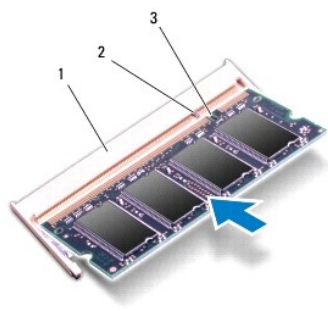
Replacing the Memory Module(s)

1. Follow the instructions in [Before You Begin](#).

 **NOTE:** If you need to install memory modules in two connectors, install a memory module in the lower connector before you install a memory module in the upper connector.

2. Align the notch in the memory module with the tab in the memory-module connector.
3. Slide the memory module into the connector at a 45-degree angle, and press the memory module down until it clicks into place. If you do not hear the click, remove the memory module and reinstall it.

 **NOTE:** If the memory module is not installed properly, the computer may not boot.



1	memory-module connector	2	tab
3	notch		


4. If you have replaced memory module(s) in connectors DIMM A and DIMM B, go to [step 6](#).
5. If you have replaced memory module(s) in connectors DIMM C and DIMM D:
 - a. Replace the keyboard (see [Replacing the Keyboard](#)).
 - b. Replace the center control cover (see [Replacing the Center Control Cover](#)).
6. Replace the base cover (see [Replacing the Base Cover](#)).
7. Replace the battery pack (see [Replacing the Battery Pack](#)).

 **CAUTION:** Before turning on the computer, replace all screws and ensure that no stray screws remain inside the computer. Failure to do so may result in damage to the computer.

8. Turn on the computer.

If you add more memory to your computer, as the computer boots, it detects the additional memory and automatically updates the system configuration information.

To confirm the amount of memory installed in the computer:

Click **Start**  → **Control Panel** → **System and Security** → **System**.

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Wireless Mini-Card

Alienware M18x Service Manual

• [Removing the Mini-Card](#)

• [Replacing the Mini-Card](#)

WARNING: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.

CAUTION: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on your computer).

CAUTION: Only a certified service technician should perform repairs on your computer. Damage due to servicing that is not authorized by Dell is not covered by your warranty.

CAUTION: To help prevent damage to the system board, remove the main battery (see [Removing the Battery Pack](#)) before working inside the computer.

NOTE: Dell or Alienware does not guarantee compatibility or provide support for Mini-Cards from sources other than Dell or Alienware.

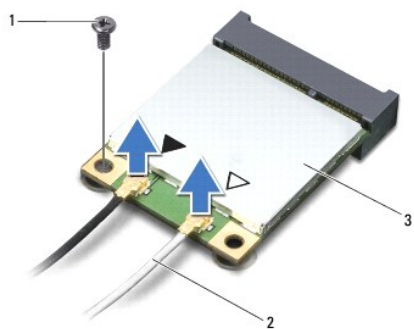
If you ordered a wireless Mini-Card with your computer, the card is already installed.

Your computer supports one half-Mini Card slot for WLAN.

NOTE: Depending on the configuration of the computer when it was sold, the Mini-Card slot may or may not have a Mini-Card installed.

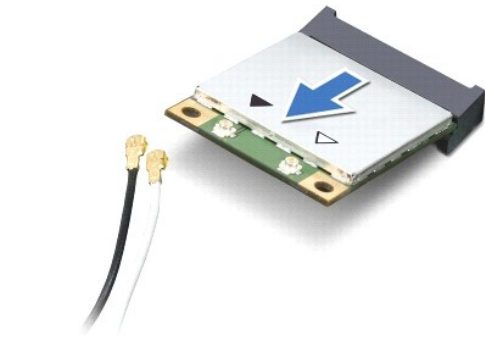
Removing the Mini-Card

1. Follow the instructions in [Before You Begin](#).
2. Remove the battery pack (see [Removing the Battery Pack](#)).
3. Remove the base cover (see [Removing the Base Cover](#)).
4. Disconnect the antenna cables from the Mini-Card.
5. Remove the screw that secures the Mini-Card to the system board.



1	screw	2	antenna cables (2)
3	Mini-Card		

6. Lift the Mini-Card out of the connector on the system board.



CAUTION: When the Mini-Card is not in the computer, store it in protective antistatic packaging. For more information, see "Protecting Against Electrostatic Discharge" in the safety information that shipped with your computer.

Replacing the Mini-Card

1. Follow the instructions in [Before You Begin](#).
2. Remove the new Mini-Card from its packaging.

CAUTION: Use firm and even pressure to slide the card into place. If you use excessive force, you may damage the connector.

CAUTION: The connectors are keyed to ensure correct insertion. If you feel resistance, check the connectors on the card and on the system board, and realign the card.

3. Insert the Mini-Card connector at a 45-degree angle into the connector on the system board.
4. Press the other end of the Mini-Card down into the slot on the system board and replace the screw that secures the Mini-Card to the system board.
5. Connect the appropriate antenna cables to the Mini-Card you are installing. The following table provides the antenna cable color scheme for each Mini-Card supported by your computer.

Connectors on the Mini-Card	Antenna Cable Color Scheme
WLAN (2 or 3 antenna cables)	
Main WLAN (white triangle)	white
Auxiliary WLAN (black triangle)	black
MIMO WLAN (gray triangle) (optional)	gray

6. Replace the base cover (see [Replacing the Base Cover](#)).
7. Replace the battery pack (see [Replacing the Battery Pack](#)).

CAUTION: Before turning on the computer, replace all screws and ensure that no stray screws remain inside the computer. Failure to do so may result in damage to the computer.

8. Install the drivers and utilities, if required.

NOTE: If you are installing a Mini-Card from a source other than Dell or Alienware, you must install the appropriate drivers and utilities.

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Optical Drive

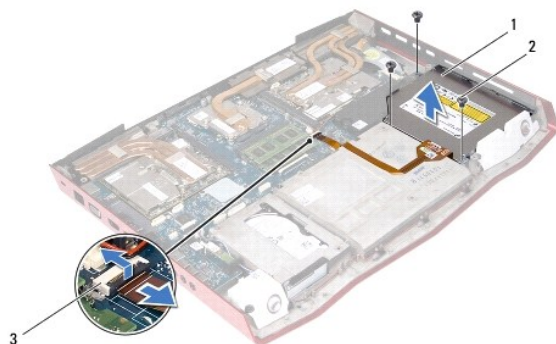
Alienware M18x Service Manual

- [Removing the Optical Drive](#)
- [Replacing the Optical Drive](#)

- WARNING:** Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.
- CAUTION:** Only a certified service technician should perform repairs on your computer. Damage due to servicing that is not authorized by Dell is not covered by your warranty.
- CAUTION:** To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on your computer).
- CAUTION:** To help prevent damage to the system board, remove the main battery (see [Removing the Battery Pack](#)) before working inside the computer.

Removing the Optical Drive

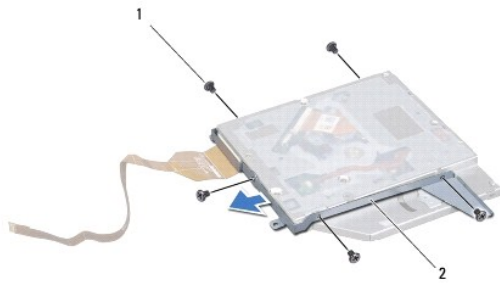
1. Follow the instructions in [Before You Begin](#).
2. Remove the battery pack (see [Removing the Battery Pack](#)).
3. Remove the base cover (see [Removing the Base Cover](#)).
4. Remove the center control cover (see [Removing the Center Control Cover](#)).
5. Remove the keyboard (see [Removing the Keyboard](#)).
6. Remove the macro keyboard (see [Removing the Macro Keyboard](#)).
7. Remove the power-button board (see [Removing the Power-Button Board](#)).
8. Remove the display assembly (see [Removing the Display Assembly](#)).
9. Follow the instructions from [step 10](#) to [step 16](#) in [Removing the Palm Rest](#).
10. Remove the I/O board (see [Removing the I/O Board](#)).
11. Lift the connector latch on the connector on the system board and disconnect the optical-drive cable from the connector on the system board, and then gently peel off the optical-drive cable from the computer base.
12. Remove the three screws that secure the optical-drive assembly to the computer base.



1	optical-drive	2	screws (3)
3	optical-drive cable connector		

13. Lift the optical-drive assembly off the computer base.

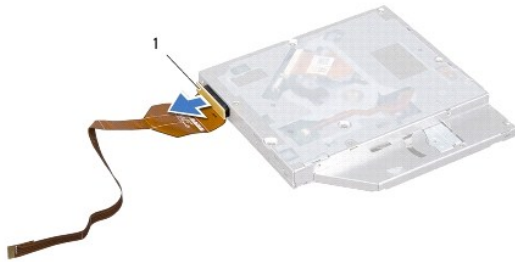
14. Remove the five screws that secure the optical-drive bracket to the optical drive.



1	screws (5)	2	optical-drive bracket
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15. Remove the optical-drive bracket from the optical drive.

16. Remove the interposer from the optical drive.




1	interposer
---	------------

Replacing the Optical Drive

1. Follow the instructions in [Before You Begin](#).
2. Connect the interposer to the optical drive.
3. Align the screw holes on the optical-drive bracket with the screw holes on the optical drive and replace the five screws that secure the optical-drive bracket to the optical drive.
4. Align the slot on the optical-drive bracket with the alignment posts on computer base and place the optical-drive assembly in the computer.
5. Replace the three screws that secure the optical-drive assembly to the computer base.
6. Adhere the optical-drive cable to the computer base, slide the cable into the connector on the system board, and press down on the connector latch to secure the cable.
7. Replace the I/O board (see [Replacing the I/O Board](#)).
8. Follow the instructions from [step 4](#) to [step 7](#) in [Replacing the Palm Rest](#).
9. Replace the display assembly (see [Replacing the Display Assembly](#)).
10. Replace the macro keyboard (see [Replacing the Macro Keyboard](#)).
11. Replace the keyboard (see [Replacing the Keyboard](#)).
12. Replace the center control cover (see [Replacing the Center Control Cover](#)).

13. Replace the base cover (see [Replacing the Base Cover](#)).
14. Replace the battery pack (see [Replacing the Battery Pack](#)).

 **CAUTION:** Before turning on the computer, replace all screws and ensure that no stray screws remain inside the computer. Failure to do so may result in damage to the computer.

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Palm Rest

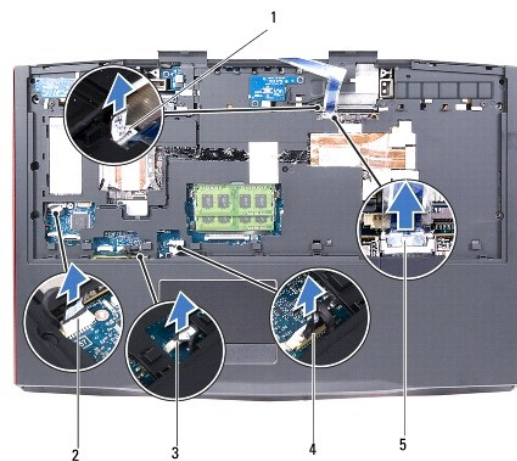
Alienware M18x Service Manual

- [Removing the Palm Rest](#)
- [Replacing the Palm Rest](#)

- WARNING:** Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.
- CAUTION:** To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on your computer).
- CAUTION:** Only a certified service technician should perform repairs on your computer. Damage due to servicing that is not authorized by Dell is not covered by your warranty.
- CAUTION:** To help prevent damage to the system board, remove the main battery (see [Removing the Battery Pack](#)) before working inside the computer.

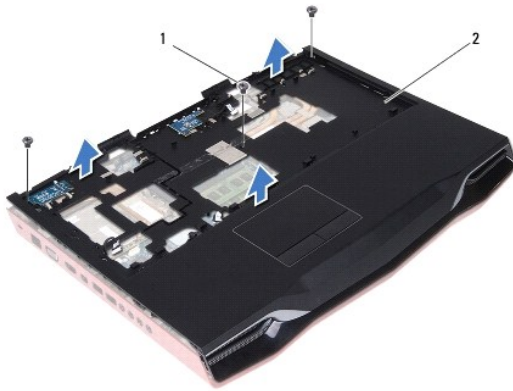
Removing the Palm Rest

1. Follow the instructions in [Before You Begin](#).
2. Remove any installed card or blank from the Media-Card Reader.
3. Remove the battery pack (see [Removing the Battery Pack](#)).
4. Remove the base cover (see [Removing the Base Cover](#)).
5. Follow the instruction from [step 4](#) to [step 6](#) in [Removing the Hard Drive\(s\)](#).
6. Remove the center control cover (see [Removing the Center Control Cover](#)).
7. Remove the keyboard (see [Removing the Keyboard](#)).
8. Remove the macro keyboard (see [Removing the Macro Keyboard](#)).
9. Remove the display assembly (see [Removing the Display Assembly](#)).
10. Disconnect the power-button cable, status-light board cable, speaker-LED board cable, touch-pad cable, and video-card connector cable from the connectors on the system board.



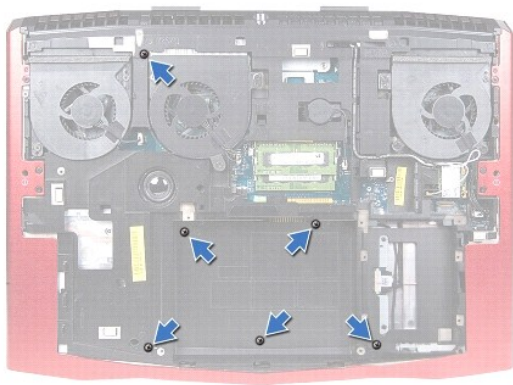
1	power button-board cable connector	2	status-light board cable connector
3	speaker LED-board cable	4	touch-pad cable connector
5	video-card connector cable		

11. Remove the three screws that secure the palm-rest assembly to the computer base.



1	screws (3)	2	palm-rest assembly
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12. Turn the computer over.
13. Remove the six screws that secure the palm-rest assembly to the computer base.



14. Turn the computer over.
15. Carefully pry out the palm-rest assembly from the two tabs along the rear edge of the computer, and then ease the palm-rest assembly from the computer base.


CAUTION: Carefully separate the palm-rest assembly from the computer base to avoid damage to the palm-rest assembly.

16. Lift the palm-rest assembly off the computer base.
17. Remove the power-button board (see [Removing the Power-Button Board](#)).
18. Remove the status-light board (see [Removing the Status-Light Board](#)).

Replacing the Palm Rest

1. Follow the instructions in [Before You Begin](#).
2. Replace the power-button board (see [Replacing the Power-Button Board](#)).
3. Replace the status-light board (see [Replacing the Status-Light Board](#)).
4. Align the palm-rest assembly on the computer base and gently snap the palm-rest assembly into place.

5. Replace the three screws that secure the palm-rest assembly to the computer base.
6. Connect the power-button cable, status-light board cable, speaker-LED board cable, touch-pad cable, and video-card connector cable to the respective connectors on the system board.
7. Turn the computer over and replace the six screws that secure the palm-rest assembly to the computer base.
8. Replace the display assembly (see [Replacing the Display Assembly](#)).
9. Replace the macro keyboard (see [Replacing the Macro Keyboard](#)).
10. Replace the keyboard (see [Replacing the Keyboard](#)).
11. Replace the center control cover (see [Replacing the Center Control Cover](#)).
12. Follow the instructions from [step 8](#) to [step 10](#) in [Replacing the Hard Drive\(s\)](#).
13. Replace the base cover (see [Replacing the Base Cover](#)).
14. Replace the battery pack (see [Replacing the Battery Pack](#)).
15. Replace any cards or blank that you removed from the Media-Card Reader.

 **CAUTION:** Before turning on the computer, replace all screws and ensure that no stray screws remain inside the computer. Failure to do so may result in damage to the computer.

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Power-Button Board

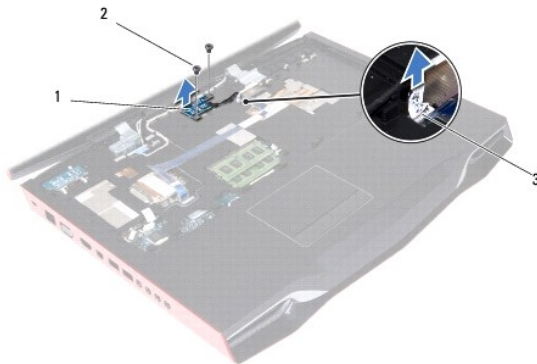
Alienware M18x Service Manual

- [Removing the Power-Button Board](#)
- [Replacing the Power-Button Board](#)

- WARNING:** Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.
- CAUTION:** To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on your computer).
- CAUTION:** Only a certified service technician should perform repairs on your computer. Damage due to servicing that is not authorized by Dell is not covered by your warranty.
- CAUTION:** To help prevent damage to the system board, remove the main battery (see [Removing the Battery Pack](#)) before working inside the computer.

Removing the Power-Button Board

1. Follow the instructions in [Before You Begin](#).
2. Remove the battery pack (see [Removing the Battery Pack](#)).
3. Remove the base cover (see [Removing the Base Cover](#)).
4. Remove the center control cover (see [Removing the Center Control Cover](#)).
5. Disconnect the power-button board cable from the connector on the system board.
6. Remove the two screws that secure the power-button board to the palm-rest assembly.



1	power-button board	2	screws (2)
3	power-button board cable connector		

7. Lift the power-button board off the palm-rest assembly.

Replacing the Power-Button Board

1. Follow the instructions in [Before You Begin](#).
2. Align the screws holes on the power-button board with the screw holes on the palm-rest assembly.
3. Replace the two screws that secure the power-button board to the palm-rest assembly.
4. Connect the power-button board cable to the connector on the system board.

5. Replace the center control cover (see [Replacing the Center Control Cover](#)).
6. Replace the base cover (see [Replacing the Base Cover](#)).
7. Replace the battery pack (see [Replacing the Battery Pack](#)).

 **CAUTION:** Before turning on the computer, replace all screws and ensure that no stray screws remain inside the computer. Failure to do so may result in damage to the computer.

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Speakers

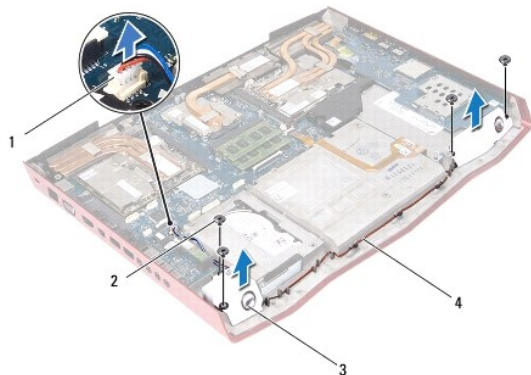
Alienware M18x Service Manual

- [Removing the Speakers](#)
- [Replacing the Speakers](#)

- WARNING:** Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.
- CAUTION:** To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on your computer).
- CAUTION:** Only a certified service technician should perform repairs on your computer. Damage due to servicing that is not authorized by Dell is not covered by your warranty.
- CAUTION:** To help prevent damage to the system board, remove the main battery (see [Removing the Battery Pack](#)) before working inside the computer.

Removing the Speakers

1. Follow the instructions in [Before You Begin](#).
2. Remove the battery pack (see [Removing the Battery Pack](#)).
3. Remove the base cover (see [Removing the Base Cover](#)).
4. Remove the center control cover (see [Removing the Center Control Cover](#)).
5. Remove the keyboard (see [Removing the Keyboard](#)).
6. Remove the macro keyboard (see [Removing the Macro Keyboard](#)).
7. Remove the display assembly (see [Removing the Display Assembly](#)).
8. Follow the instructions from [step 10](#) to [step 14](#) in [Removing the Palm Rest](#).
9. Disconnect the speaker cable from the connector on the system board.
10. Note the speakers cable routing and remove the cable from the routing guides on the computer base.
11. Remove the four screws that secure the speakers to the computer base.




1	speakers-cable connector	2	screws (4)
3	speakers (2)	4	speakers-cable routing

12. Lift the speakers, along with the speaker cable, off the computer base.

Replacing the Speakers

1. Follow the instructions in [Before You Begin](#).
2. Align the screw holes on the speakers with the screw holes on the computer base and replace the four screws that secure the speakers to the computer base.
3. Route the speakers cable through the routing guides on the computer base and then connect the speakers cable to the connector on the system board.
4. Follow the instructions from [step 4](#) to [step 7](#) in [Replacing the Palm Rest](#).
5. Replace the display assembly (see [Replacing the Display Assembly](#)).
6. Replace the macro keyboard (see [Replacing the Macro Keyboard](#)).
7. Replace the keyboard (see [Replacing the Keyboard](#)).
8. Replace the center control cover (see [Replacing the Center Control Cover](#)).
9. Replace the base cover (see [Replacing the Base Cover](#)).
10. Replace the battery pack (see [Replacing the Battery Pack](#)).

 **CAUTION:** Before turning on the computer, replace all screws and ensure that no stray screws remain inside the computer. Failure to do so may result in damage to the computer.

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Subwoofer

Alienware M18x Service Manual

● [Removing the Subwoofer](#)

● [Replacing the Subwoofer](#)

WARNING: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.

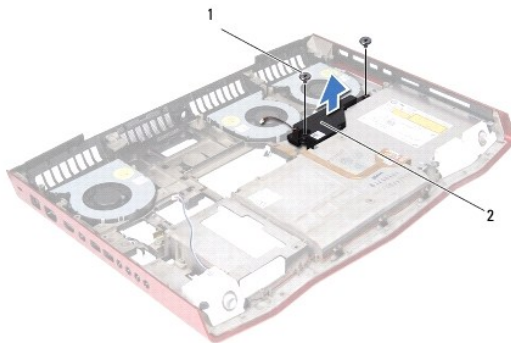
CAUTION: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on your computer).

CAUTION: Only a certified service technician should perform repairs on your computer. Damage due to servicing that is not authorized by Dell is not covered by your warranty.

CAUTION: To help prevent damage to the system board, remove the main battery (see [Removing the Battery Pack](#)) before working inside the computer.

Removing the Subwoofer

1. Follow the instructions in [Before You Begin](#).
2. Follow the instructions from [step 3](#) to [step 13](#) in [Removing the System Board](#).
3. Disconnect the speaker cable and the subwoofer cable from the connectors on the system board.
4. Lift the connector latch and disconnect the optical-drive cable from the connector on the system board.
5. Remove the 11 screws that secure the system board to the computer base.
6. Carefully ease the connectors on the system board out of the slots in the computer and lift the system board off the computer base.
7. Remove the two screws that secure the subwoofer to the computer base.




1	screws (2)	2	subwoofer
---	------------	---	-----------

8. Lift the subwoofer along with the cable off the computer base.

Replacing the Subwoofer

1. Follow the instructions in [Before You Begin](#).
2. Align the screw holes on the subwoofer with the screw holes on the computer base.
3. Replace the two screws that secure the subwoofer to the computer base.
4. Align the connectors on the system board with the slots on the computer base and place it on the computer base.

5. Replace the 11 screws that secure the system board to the computer base.
6. Slide the optical drive cable into the connector on the system board and press down on the connector latch to secure the cable.
7. Connect the speaker cable and the subwoofer cable to the respective connectors on the system board.
8. Follow the instructions from [step 13](#) to [step 23](#) in [Replacing the System Board](#).

 **CAUTION:** Before turning on the computer, replace all screws and ensure that no stray screws remain inside the computer. Failure to do so may result in damage to the computer.


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System Board


Alienware M18x Service Manual


- [Removing the System Board](#)
- [Replacing the System Board](#)
- [Entering the Service Tag in the BIOS](#)

 **WARNING:** Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.

 **CAUTION:** To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on your computer).

 **CAUTION:** Only a certified service technician should perform repairs on your computer. Damage due to servicing that is not authorized by Dell is not covered by your warranty.

 **CAUTION:** To help prevent damage to the system board, remove the main battery (see [Removing the Battery Pack](#)) before working inside the computer.

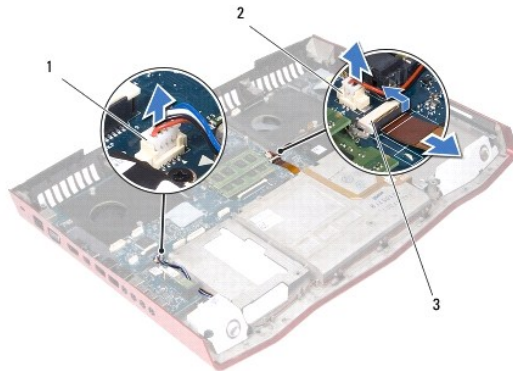
 **CAUTION:** Handle components by their edges, and avoid touching pins and contacts.

The system board's BIOS chip contains the Service Tag, which is also visible on a barcode label at the bottom of the computer.

Removing the System Board

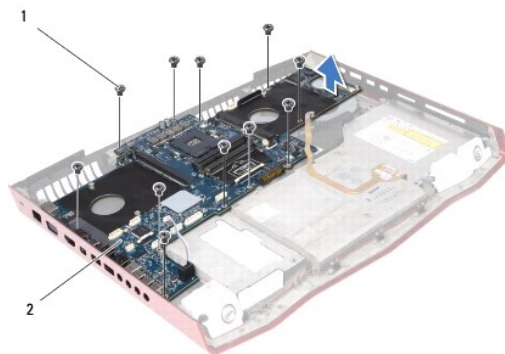
1. Follow the instructions in [Before You Begin](#).
2. Remove any installed card or blank from the Media-Card Reader.
3. Remove the battery pack (see [Removing the Battery Pack](#)).
4. Remove the base cover (see [Removing the Base Cover](#)).
5. Remove the hard drive(s) (see [Removing the Hard Drive\(s\)](#)).
6. Disconnect the coin-cell battery cable from the connector on the system board (see [Removing the Coin-Cell Battery](#)).
7. Disconnect the video-card heat-sink fan(s) cable from the connector on the system board (see [Removing the Video-Card Heat-Sink Fan\(s\)](#)).
8. Disconnect the processor heat-sink fan cable from the connector on the system board (see [Removing the Processor Heat-Sink Fan](#)).
9. Remove the center control cover (see [Removing the Center Control Cover](#)).
10. Remove the keyboard (see [Removing the Keyboard](#)).
11. Remove the macro keyboard (see [Removing the Macro Keyboard](#)).
12. Remove the display assembly (see [Removing the Display Assembly](#)).
13. Remove the palm-rest assembly (see [Removing the Palm Rest](#)).
14. Remove the Bluetooth card (see [Removing the Bluetooth Card](#)).
15. Remove the memory module(s) (see [Removing the Memory Module\(s\)](#)).
16. Remove the Mini-Card (see [Removing the Mini-Card](#)).
17. Remove the video-card heat-sink(s) (see [Removing the Video-Card Heat-Sink\(s\)](#)).
18. Remove the video card(s) (see [Removing the Video Card\(s\)](#)).
19. Remove the processor heat-sink (see [Removing the Processor Heat-Sink](#)).
20. Remove the processor module (see [Removing the Processor Module](#)).

21. Disconnect the speaker cable and the subwoofer cable from the connectors on the system board.
22. Lift the connector latch and disconnect the optical-drive cable from the connector on the system board.



1	speaker-cable connector	2	subwoofer-cable connector
3	optical-drive cable connector		

23. Remove the 11 screws that secure the system board to the computer base.




1	screws (11)	2	system board
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24. Carefully ease the connectors on the system board out of the slots in the computer and lift the system board off the computer base.

Replacing the System Board

1. Follow the instructions in [Before You Begin](#).
2. Align the connectors on the system board with the slots on the computer base and place it on the computer base.
3. Replace the 11 screws that secure the system board to the computer base.
4. Replace the Mini-Card (see [Replacing the Mini-Card](#)).
5. Replace the memory module(s) (see [Replacing the Memory Module\(s\)](#)).
6. Slide the optical drive cable into the connector on the system board and press down on the connector latch to secure the cable.
7. Connect the speaker cable and the subwoofer cable to the respective connectors on the system board.
8. Replace the processor module (see [Replacing the Processor Module](#)).
9. Replace the processor heat-sink (see [Replacing the Processor Heat-Sink](#)).

10. Replace the video card(s) (see [Replacing the Video Card\(s\)](#)).
11. Replace the video-card heat-sink(s) (see [Replacing the Video-Card Heat- Sink\(s\)](#)).
12. Replace the Bluetooth card (see [Replacing the Bluetooth Card](#)).
13. Replace the palm-rest assembly (see [Replacing the Palm Rest](#)).
14. Replace the display assembly (see [Replacing the Display Assembly](#)).
15. Replace the macro keyboard (see [Replacing the Macro Keyboard](#)).
16. Replace the keyboard (see [Replacing the Keyboard](#)).
17. Replace the center control cover (see [Replacing the Center Control Cover](#)).
18. Connect the processor heat-sink fan cable to the connector in the system board (see [Replacing the Processor Heat-Sink Fan](#)).
19. Connect the video card heat-sink fan cable to the connector in the system board (see [Replacing the Video-Card Heat-Sink Fan\(s\)](#)).
20. Connect the coin-cell battery cable to the connector in the system board (see [Replacing the Coin-Cell Battery](#)).
21. Replace the hard drive(s) (see [Replacing the Hard Drive\(s\)](#)).
22. Replace the base cover (see [Replacing the Base Cover](#)).
23. Replace the battery pack (see [Replacing the Battery Pack](#)).
24. Replace any cards or blank that you removed from the Media-Card Reader.

 **CAUTION:** Before turning on the computer, replace all screws and ensure that no stray screws remain inside the computer. Failure to do so may result in damage to the computer.

25. Turn on the computer.

 **NOTE:** After you have replaced the system board, enter the computer Service Tag into the BIOS of the replacement system board.

26. Enter the service tag (see [Entering the Service Tag in the BIOS](#)).

Entering the Service Tag in the BIOS

1. Ensure that the AC adapter is plugged in and that the main battery is installed properly.
2. Turn on the computer.
3. Press <F2> during POST to enter the system setup program.
4. Navigate to the **Security** tab and enter the service tag in the **Set Service Tag** field.

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NOTE: A NOTE indicates important information that helps you make better use of your computer.




CAUTION: A CAUTION indicates potential damage to hardware or loss of data if instructions are not followed.



WARNING: A WARNING indicates a potential for property damage, personal injury, or death.

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2011-04 Rev. A00

Regulatory model: P12E
Regulatory type: P12E001

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Video Card(s)

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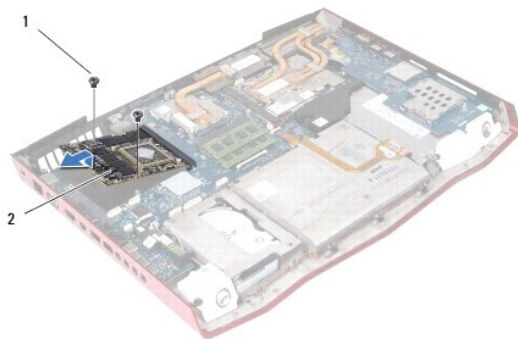
- [Removing the Video Card\(s\)](#)
- [Replacing the Video Card\(s\)](#)

- WARNING:** Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.
- WARNING:** The video-card assembly may be very hot during normal operation. Ensure that it has had sufficient time to cool before you touch it.
- CAUTION:** Only a certified service technician should perform repairs on your computer. Damage due to servicing that is not authorized by Dell is not covered by your warranty.
- CAUTION:** To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on your computer).
- CAUTION:** To help prevent damage to the system board, remove the main battery (see [Removing the Battery Pack](#)) before working inside the computer.

Removing the Video Card(s)

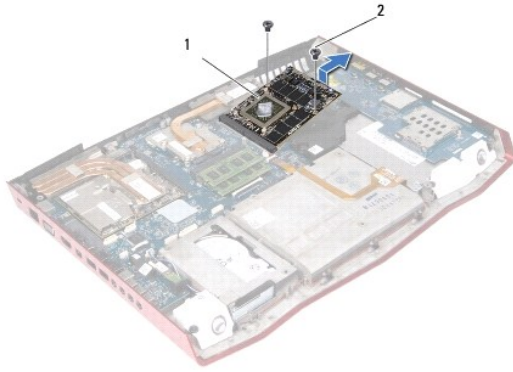
1. Follow the instructions in [Before You Begin](#).
2. Remove the battery pack (see [Removing the Battery Pack](#)).
3. Remove the base cover (see [Removing the Base Cover](#)).
4. Remove the center control cover (see [Removing the Center Control Cover](#)).
5. Remove the keyboard (see [Removing the Keyboard](#)).
6. Remove the macro keyboard (see [Removing the Macro Keyboard](#)).
7. Remove the display assembly (see [Removing the Display Assembly](#)).
8. Follow the instructions from [step 10](#) to [step 16](#) in [Removing the Palm Rest](#).
9. Remove the video-card heat-sink(s) (see [Removing the Video-Card Heat-Sink\(s\)](#)).
10. Remove the two screws that secure the video-card(s) to the system board.

Primary Video Card



1	screws (2)	2	primary video-card
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Secondary Video Card



1	secondary video card	2	screws (2)
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11. Lift and slide the video-card(s) out to disconnect it from the connector on the system board.

Replacing the Video Card(s)

1. Follow the instructions in [Before You Begin](#).
2. Insert the video card connector at a 45-degree angle into the connector on the system board.
3. Press the other end of the video-card down into the slot on the system board and replace the two screws that secure the video-card(s) to the system board.
4. Replace the video-card heat-sink(s) (see [Replacing the Video-Card Heat- Sink\(s\)](#)).
5. Follow the instructions from [step 4](#) to [step 7](#) in [Replacing the Palm Rest](#).
6. Replace the display assembly (see [Replacing the Display Assembly](#)).
7. Replace the macro keyboard (see [Replacing the Macro Keyboard](#)).
8. Replace the keyboard (see [Replacing the Keyboard](#)).
9. Replace the center control cover (see [Replacing the Center Control Cover](#)).
10. Replace the base cover (see [Replacing the Base Cover](#)).
11. Replace the battery pack (see [Replacing the Battery Pack](#)).

CAUTION: Before turning on the computer, replace all screws and ensure that no stray screws remain inside the computer. Failure to do so may result in damage to the computer.

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Video-Card Heat-Sink(s)

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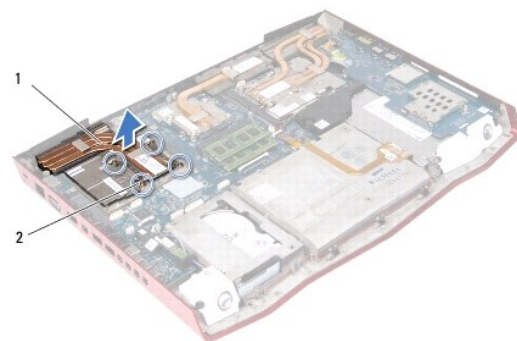
- [Removing the Video-Card Heat-Sink\(s\)](#)
- [Replacing the Video-Card Heat-Sink\(s\)](#)

- WARNING:** Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance.
- WARNING:** The video-card assembly may be very hot during normal operation. Ensure that it has had sufficient time to cool before you touch it.
- CAUTION:** Only a certified service technician should perform repairs on your computer. Damage due to servicing that is not authorized by Dell is not covered by your warranty.
- CAUTION:** To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface (such as a connector on your computer).
- CAUTION:** To help prevent damage to the system board, remove the main battery (see [Removing the Battery Pack](#)) before working inside the computer.

Removing the Video-Card Heat-Sink(s)

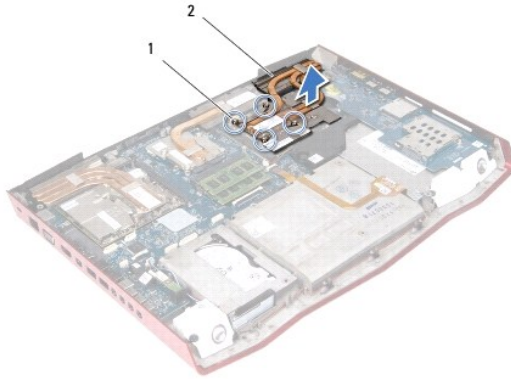
1. Follow the instructions in [Before You Begin](#).
2. Remove the battery pack (see [Removing the Battery Pack](#)).
3. Remove the base cover (see [Removing the Base Cover](#)).
4. Remove the center control cover (see [Removing the Center Control Cover](#)).
5. Remove the keyboard (see [Removing the Keyboard](#)).
6. Remove the macro keyboard (see [Removing the Macro Keyboard](#)).
7. Remove the display assembly (see [Removing the Display Assembly](#)).
8. Follow the instructions from [step 10](#) to [step 16](#) in [Removing the Palm Rest](#).
9. Loosen the four captive screws that secure the primary video-card heat-sink to the system board.
10. Loosen the four captive screws that secure the secondary video-card heat-sink to the system board.
11. Lift the video-card heat-sink(s) off the video card(s).

Primary video-card heat-sink




1	primary video-card heat-sink	2	captive screws (4)
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Secondary video-card heat-sink




1	captive screws (4)	2	secondary video-card heat-sink
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Replacing the Video-Card Heat-Sink(s)

 **CAUTION:** Incorrect alignment of the video-card heat-sink(s) can damage the video card(s).

 **NOTE:** You can reuse the original thermal grease if you are reinstalling the original video-card heat-sink(s). If you are installing a replacement video-card heat-sink, use the thermal grease provided in the kit to ensure that thermal conductivity is achieved.

1. Follow the instructions in [Before You Begin](#).
2. Align the screw holes on the video-card heat-sink(s) with the screw holes on the computer base.
3. Tighten the four captive screws that secure the primary video-card heat-sink to the computer base.
4. Tighten the four captive screws that the secondary video-card heat-sink to the computer base.
5. Follow the instructions from [step 4](#) to [step 7](#) in [Replacing the Palm Rest](#).
6. Replace the display assembly (see [Replacing the Display Assembly](#)).
7. Replace the macro keyboard (see [Replacing the Macro Keyboard](#)).
8. Replace the keyboard (see [Replacing the Keyboard](#)).
9. Replace the center control cover (see [Replacing the Center Control Cover](#)).
10. Replace the base cover (see [Replacing the Base Cover](#)).
11. Replace the battery pack (see [Replacing the Battery Pack](#)).

 **CAUTION:** Before turning on the computer, replace all screws and ensure that no stray screws remain inside the computer. Failure to do so may result in damage to the computer.

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